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Science News-Letter

A Weekly Summary of Current Science

EDITED BY WATSON DAVIS

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ARCHÆOLOGY

Ancient Carthage is Scene of Real Estate Boom

By Emily C. Davis

Carthage by the sea—trains for commuters—sea breeze all the year round.

This is the newest way in which proud old Carthage, famous metropolis of the ancient world, is making itself known.

Judging from various kinds of evidence this real estate development is on the same site as the Carthage that was once renowned as the world's wealthiest city. Here was the Carthage of Hannibal and Dido, the city that stood by itself and that held within its borders one of the most wicked and most remarkable civilizations of history.

Carthage of today is gaining local fame as being within thirty minutes of the prosperous, fast growing city of Tunis. Tunis is a low, inland town, oppressively hot in summer, and Carthage is, as real estate dealers like to say, "swept by the fresh sea breezes." With the establishment of fast electric train serivce, and even "theater trains" late at night, the scene is well set to make the tired business men of Tunis feel that a villa in Carthage is not a luxury but a necessity.

Ground in Carthage is being parceled off into lots for little one-story bungalows and villas. Land is firmly held—and sold—at boom prices. And archæologists who are attempting to explore systematically the buried past of the city, and who have already made some important finds there, are watching the growth of this twentieth century Carthage with apprehension.

The oldest chapters in the history of this city have always been mysterious and baffling. After Rome conquered the Carthagians in 146 B.C. and razed the city and cursed the soil "that neither house nor cornfield might ever reappear on the spot," a Roman colony was established there within a century. Later it fell to the level of a Vandal base. Then Belisarius came and made Carthage a Byzantine city, until the Arabs swept it with fire and left it in ruins in 698 A.D.

All this makes an eventful history for any town. But it is the old Punic metropolis which flourished in earlier times, from about the ninth century B.C. down to the terrible burning and destruction by Rome in the year 146 B.C., that stirs the imagination.

There are innumerable traditions and fables about this civilization, but it is only in recent decades that the lonely stretch of land on the North African coast has begun to give up the secrets that are buried under six to fifteen feet of accumulated soil. All the histories of Carthage that we have today were written by her enemies, people who were at war with the African merchants. Archæologists are especially eager to find out what Carthage would say for herself, on stone tablets and in ruined buildings.

But, now, the initial cost of making exploratory excavations to find out where important ruins are located has become practically prohibitive, according to Dr. Francis W. Kelsey, director of the Franco-American Expedition which made excavations at Carthage, under the charter of the Washington Archæological Society, in 1925.

Dr. Kelsey, who is now at the University of Michigan, believes that the site of Carthage should be brought under the control of the French government and should be gradually purchased or taken over by the government.

"It should then be excavated and developed as a great archælogical park, under an administration similar to that of Pompeii, Timgad, and other sites properly excavated and opened to the public, he says.

The finds recently made by the Franco-American expedition at this site indicate that there is much more of the old Punic Carthage lying in the depths of the soil than was supposed.

(*Continued on page* 39)

Carthage today, a suburban town with a buried mystery.

Science News-Letter

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GC	Oceanology and oceanography.
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ANTHROPOLOGY

First Details On Java Skull

Details of the important discovery of the new Pithecanthropus relics in Java have been lacking until authentic information, given in the following article, was obtained by cable. The interesting story of the discovery of the first bones of Pithecanthropus and the place of the ape-man in pre-human history was described in an article in the NEWS-LETTER for October 9.

First authentic announcement of details of the new discovery of prehistoric man in Java, has been made to Science Service by the Governor General of Java, Dr. A. C. D. de Graeff, through a cablegram from Buitenzorg, Java. The ancient fossil skull, which was unearthed by natives, is in the possession of Dr. C. E. J. Heberlein, physician in the Dutch civil service, and is described as a damaged cast in spongy stone of volcanic origin.

The upper part of the skull, Dr. de Graeff states, looks like the skull-top of Pithecanthropus erectus, famous ape-man of some 500,000 years ago, and was discovered at the same site.

Finding of the new Javanese skull is traced by Dr. C. E. J. Heberlein to a lecture given by Dr. Ales Hrdlicka, anthropologist of the Smithsonian Institution, when the anthropologist visited Java in the summer of 1925.

In a letter to Dr. Hrdlicka, Dr. Heberlein states that he had long been interested in geology, although he is a doctor by profession, and that the lecture caused him to visit Trinil this summer in order to see the famous site where the important remains of Pithecanthropus were discovered in 1891. His casual excursion yielded the new specimen which apparently belongs to the same ancient time. The object had been unearthed by natives, and judging by the description it had been handled with some care.

The new fossil skull which will share honors with Pithecanthropus as being the oldest known remains of a man-like creature, consists of the two frontal bones, the right and two-thirds of the left parietal bones, the upper part of the right and a little of the left temporal bones and the supraorbital arch.

The object is described as a cast, but since the ridges over the eyes are indicated, Dr. Hrdlicka explains that this indicates that the exterior form of the skull is preserved. These ridges would not be in evidence if the lava cast had formed within the skull, as the interior of a skull is not so ridged. Presumably mineral material has either replaced the bones themselves, leaving a petrified skull, or the bones have dissolved leaving a cast around them.

BIOLOGY—MEDICINE

WILLIAM WILLIAMS KEEN

Dean of American Surgeons

Civil war army surgeon, teacher for many years, evolutionist, and member of the Medical Corps in the Great War—these are some of the claims to fame of Dr. W. W. Keen, of Philadelphia.

Dr. Keen was born in Philadelphia on the nineteenth of January, 1837. He graduated from Brown University and the Jefferson Medical College in Philadelphia, both of which institutions have been among a number to confer upon him honorary degrees. Though he has written numerous medical books, two of his works are of very general interest. One, "Animal Experimentation and Medical Progress," tells of the advances in medical science made possible by experiments on living animals. His most recent book, "I Believe in God and Evolution," is the other. This book originated in a commencement address at Crozer Theological Seminary (Baptist) of which he has been a trustee for fifty-five years.

His ideas on evolution are summarized in the following words from the book:

"Do I believe in Evolution? Most assuredly. And for the very best of reasons, viz: that I see the evidence of it all around me every day. Even in my own lifetime I have seen a wonderful evolution in vegetables, in fruit, in flowers, in pigeons and chickens, in the dog, the cow and the horse. If so great progress is possible in the few decades of one human life, what is not possible in thousands and even millions of years, for the earth undoubtedly has existed for many millions of years."

A gigantic New York skyscraper now being built is to have three acres of glass windows.

EDUCATION

Arranging Your Mind

By Edwin E. Slosson

Interest is largely dependent on association. Children have the greatest general acquisitiveness. They are interested in everything. But as we grow older and realize that no man can swallow the universe, we grow particular with our mental food. We pick and choose. A child's mind is like a ball covered with glue; roll it around and it will pick up everything that it touches. A man's mind is like a magnet that will pick out a certain metal from anything that may be mixed with it. He is deaf to all sounds outside a certain range unless they are very loud. His mind is trained to a certain line of thought and all ideas on his subject that come his way are picked up.

Start your mind working in a certain direction and see how facts will flock to you from all sides. How often do we hear the exclamation "Why here is an article on the very subject we were talking about, how queer!" It is merely because you have your eyes open.

That is the explanation of the broadening effect of a college education. It is not so much the amount of information a man gets in the four years but that being required to study in many different lines gives him points of interest and each of these attracts information through the rest of his life. He is like a farmhouse where an enterprising lightning rod agent has got in his work. He bristles with points that draw electricity from every passing cloud. And the points are all connected and grounded in deep earth.

Another thing, too, a well educated man has a more symmetrical mind. Certain important ideas, that the experience of the ages has shown to be best fitted for "foundation," have been implanted deep in his plastic mind and he builds on these and he is less likely to get lopsided and cranky (using this word in its nautical sense, not slang). The library of his information is systematically arranged and this is better than putting the books in by chance. It is more important that we should be able to put our hands on any book when wanted than that we should have a large library. Or to put it psychologically, it is better to have a good recollection than a large memory.

We can recall things best when they are arranged according to the logical laws of association. We remember best what made the most impression on our minds, what we were

(*Just turn the page*)

Arranging Your Mind

(*Continued from page 35*)

most interested in. For disconnected facts, with which we have no association, most of us have little memory. There are people, however, who have this casual memory to a high degree and are apt to retain without effort any fact that comes to their notice, a name or a date, a street sign or automobile number.

All systems of memory training that are rational are based on the laws of association. Many memory schemes are very crude, such as associating a nonsense word or sentence with a date. This often works fairly well and it is not fair to condemn the method on the ground that it means learning two things instead of one. It is easier to remember two things than one alone when they are connected together. If you don't want to lose a five-dollar gold piece wrap some worthless paper around it to make a big bundle. But the best memory systems are, of course, those where the association is real and logical, not arbitrary and fanciful.

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Wood can now be planed electrically.

The Island of Haiti is on the top of mountains in the sea taller than Mt. Everest.

An "electric hen" at an incubator plant in California hatches 3,000,000 chicks a year.

The sun sends as much heat to the earth in 13 seconds as the moon sends in an entire year.

A new giant locomotive recently built can pull a loaded train almost two miles in length.

There are about 40,000 deer, elk, bear, mountain sheep and other large game animals in the national forests of Idaho.

Leafy vegetables are best if gathered in the early morning when the plant cells are filled with water and covered with dew.

The great dinosaurs that lived and died off millions of years ago still hold the record of being the world's largest land animals.

A study of 500 samples of honey shows that honey grades from almost water clear, through many shades of yellow and brown, to almost black.

Science News-Letter, October 16, 1926

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ASTRONOMY

Vegetation on Mars?

By James Stokley

"Is there life on Mars?" Probably no other question is so often asked the astronomer as this, and to it his answer always is, "We don't know." But if you ask him for his personal opinion, he may concur in the belief expressed the other day by Dr. Henry Norris Russell, professor of astronomy at Princeton, that there is probably vegetable life there at least.

In fact, so far as we know, Mars is the only heavenly body of which even this can be said.

There are hundreds of millions of stars, but as these are all shining by their own light, they are far too hot to support life in any form remotely resembling any in human experience. As the sun is a star, differing from the others in the sky merely by the fact that it much closer, some of these hundred million may also have planets revolving around them, but even if they did, we have no means of detecting them.

"Alpha Centauri, the nearest star, is so far away that its light takes more than four years to reach us," said Prof. Russell. "If the earth were to be suddenly removed from the neighborhood of the sun to the region of Alpha Centauri, we wouldn't notice a very great difference, because it is very much like the sun. And then, if we were to look back towards our present sun, we would only see a bright star, and could not see Jupiter, Mars, or any of the other planets."

This leaves only the bodies that revolve around the sun as possible abodes of life, he stated, but most of these are also excluded, for at least three of the four elements of the ancients—earth, fire, air and water—are necessary for living organisms. Water is required, as moisture, air, as oxygen, and fire in the form of an equable temperature, something between the freezing and boiling points of water. Earth, or a solid surface, is not necessary, but it is doubtful whether life could originate in the sea.

The moon, then, cannot have life, because it has no moisture or air, the thousand asteroids or tiny planets are all so small that they could not hold on to any air if they ever had it. The great outer planets, Jupiter, Saturn, Uranus and Neptune are not suitable, neither is Mercury, the closest to the sun, because it always keeps the same face to the sun, making that side intensely hot, and the other extremely cold. Venus has been shown by means of the spectroscope to have no oxygen. This leaves Mars which now shines brilliantly with its reddish light in the evening eastern sky.

In 1924, when Mars was closer to the earth than it had been for many years, elaborate studies were made of it, so that now it is possible to state that it has the necessary conditions for life as we know it. As large green areas on the planet can be seen to change with the Martian seasons, Dr. Russell thinks it probable that there is vegetable life in the planet.

As for the so-called canals, Prof. Russell disagrees with opinion that the marks are mere optical illusions, for he declared that actual photographs had been made of them at the Lowell Observatory in Arizona. The marks are there," he said, "but they may not be thin straight lines as they have sometimes been represented."

Sounding a warning that discussions of life on other planets were speculations, Prof. Russell quoted from what he termed "an otherwise rather poor paper" of one of his students, who said "The earth is inhabited and it is the only planet of which we can say this with certainty."

Science News-Letter, October 16, 1926

EUGENICS

Future Men and Heredity

Is a time coming when scientists will be able to tell prospective parents what kind of children they will have? If they can, it will only be after expenditure of large sums, not only to collect the necessary data about the physical and mental traits of each individual citizen and his ancestors, but to keep the information recorded where it can be used.

"It is a reproach to science that studies on the laws of heredity in man have been so long neglected," declares Dr. C. B. Davenport of the Genetics Laboratory of the Carnegie Institution of Washington, in a report to the American Medical Association on the probabilities of inheritance of disease.

"The reason for this neglect is, however, obvious. It is the great expense involved in making these studies on human beings where control of matings is impossible. The method of study, under these limitations, is clear. One must go to the families in which the traits that we are studying are found and see of what kind are the matings that have brought them about. This study involves much travel on the part of many collaborators and careful analysis of the results."

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CHEMISTRY

Sugar From Wood

A process for manufacturing sugar out of wood, which Prof. Friedrich Bergius of Heidelberg University has worked out in the laboratory, has now reached a state where it may be utilized in industrial production on a large scale. Already a large factory to carry out the process is being erected near Geneva, Switzerland, by the International Sugar and Alcohol Company of London. It is estimated that an acre of forest land can be made to yield as much sugar as an acre of ground planted to sugar beets, and the new process has the advantage in that it can be carried out completely and continuously by machinery without the employment of the manual labor and the length of time necessary for crop production.

The synthetic sugar, however, is not the same as the sucrose made from beets or cane, but is rather like the glucose now made in America by the action of hydrochloric acid on corn starch. Glucose is not so sweet as sugar but is equally nutritious. The product of the Bergius process comes out in the form of a greyish powder, containing ninety-five per cent sugar. This can be used directly for cattle food or be purified for human use.

The process consists essentially in adding a molecule of water to each molecule of the cellulose of the wood pulp, which converts it to glucose. This is accomplished by treating sawdust with forty per cent hydrochloric acid in containers specially constructed of acid-proof and heat-proof materials. Earlier efforts to effect this transformation economically were frustrated because the acid was used in dilute solution, and afterwards, in driving off the excess of water, much of the sugar decomposed. In the present process the acid is recovered in concentrated form ready for renewed use without the expense of distillation. The necessary heat to evaporate the water from the mixture is introduced by the injection of hot vapors of mineral oil. This does not absorb the volatile acids and does not mix with the sugary solution, but floats as a layer on top and so can be easily separated. The oil is reheated and run in with more of the sugar cellulose solution.

The Bergius process for synthetic sugar was patented in the United States on July 28, 1926.

Science News-Letter, October 16, 1926

The skin of the dogfish makes good leather.

Two-thirds of the world's lepers are in China.

A sulphur bottom whale may weigh as much as 90 tons.

Paper was made almost altogether of rags until after 1850.

Snakes cannot be charmed by human beings, naturalists say.

Chinese doctors of the third century used hemp as an anesthetic.

The earth's daily rainfall amounts to about 16 million tons a second.

Sleet and ice cause more property damage than any other kind of storm.

The bulldog was so named because of its skill at fighting bulls in the sport of bull baiting.

The ancient mound builders of the Mississippi Valley made the first roads in North America.

An anti-serum for treating persons bitten by poisonous spiders has been developed by two Brazilian doctors.

Two million people die of malaria each year.

Peanut butter was first made as a food for invalids.

Producing peanuts is an old industry in southern France.

A man's body contains 24 pounds of coal in the form of carbon.

A moving picture feature film contains about 96,000 separate pictures.

More than 90 per cent of the earth's lakes are the results of glaciers.

The strawberry is rated as the most valuable of the small fruits in this country.

Over 20 kinds of harmless bacteria have been found in the mouth of a human being.

The kangaroo's tail is big enough so that it can be used as a prop when the animal stands on its hind legs.

In old Indian days, the Columbia River basin was one of the most thickly populated regions in America.

Whale meat is a popular article of food in Japan.

Glycerine is used as a lubricant for hydraulic presses in Germany.

Hydrogen gas is the lightest substance known on the earth's surface.

Copper bars were once cut in different lengths to be used as money in Ceylon.

Some of the mountains and canyons hidden under the sea have been given names.

Maoris of New Zealand weave fibers of New Zealand flax to make cloaks and girdles.

More than 30 camps of prehistoric man have been unearthed near Madrid in the past ten years.

Many railway devices used in Europe were introduced from America, according to a British engineer.

In prehistoric times, primitive surgeons used sharpened flints, pieces of bone, and fish teeth with which to let blood, open abscesses, and perform trephining operations on the skull.

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Ancient Carthage

(*Continued from page* 33)

In a preliminary report of the expedition just issued, Dr. Kelsey suggests that the historic picture of the Romans ploughing the ground of Carthage in token of its utter devastation should not be taken too literally. That is, the ploughing episode was probably confined to a small area and was merely a Roman gesture of the completeness of their conquest.

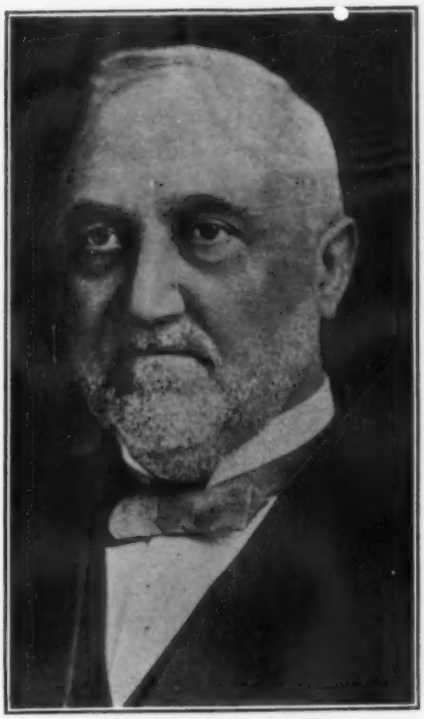
The Carthaginians, he points out, must have worked with tools and mechanical appliances. They were metal workers, potters, and masons, and they probably built their more impressive structures of stone. To destroy completely such a city, with its 700,000 or more inhabitants, would not have been easy, even if it burned seventeen days as historians declare.

After visiting the ruins of the French and Belgian towns in the European War zone, Dr. Kelsey has come to the conclusion that the soldiers of Scipio could not have accomplished such destruction at Carthage as was caused by bombs and shell fire in the great war.

"When the Roman colonists came to the site of the Punic city, twenty-four years or more after the first destruction of Carthage," he says, "they probably found great stretches of jumbled masonry, from three to ten or fifteen feet deep, with flame-scarred walls here and there projecting upwards. The familiar tales about Marius in exile may be in part apocryphal; but even so it is difficult to understand how the story about Marius 'sitting among the ruins of Carthage' could have originated if there were no ruins there."

Evidence which led to the first discovery of the newly excavated Punic remains was gained by chance in 1921. Limestone stelae, or tablets, with symbols and Punic inscriptions on them began to appear in the market of Tunis. Such stelae had been previously found about Carthage, and excavations by archæologists have revealed ruins of the Roman period and some of uncertain age. Interest in all this was so great that any find of Punic relics immediately attracted attention.

A public official in Tunis saw one of the tablets that were being offered for sale, and he at once inquired where it came from. The Arab salesman realized that his profitable business was in danger, and he told of finding the stone at a place some miles from Carthage. His directions led nowhere. So the Arab was followed and was found at Carthage, where he was busily digging in a hole. So the famous area which the early Carthaginians had held sacred to the goddess Tanit was discovered.



DR. FRANCIS W. KELSEY
Archæologist of the University of Michigan, and director of the Franco-American Expedition to Carthage.

Since then French and American archæologists and experts on antiquity and ancient languages have excavated and studied a part of the sanctuary area. But so far they have stirred up more puzzles than they have solved. Dr. Kelsey says that he has never visited a site of so limited size which has "yielded so great an abundance of evidence and at the same time increased rather than diminished the difficulties of interpretation."

In the comparatively small area that they have dug out, resembling an excavation for a large deep cellar, the archæologists have in the past season uncovered over 1,100 cinerary urns, rows of dedicatory tablets of stone set there to the goddess, and more than 300 larger stones which resemble altars. The temple ground appears rather like a modern cemetery, and the likeness goes farther than the rows of upright slabs and pillars, for the urns under and beside them contain charred bones of young children and small animals.

It is not definitely known with what rites, terrible or beautiful, the Carthaginian merchants and aristocrats set up these stones and placed these urns there. It is agreed that the place was sacred to the goddess Tanit, and Dr. Kelsey says it is certain that she was the dominant divinity of Carthage.

This goddess Tanit is represented on the stones by a variety of symbols, but over and over again the crescent, which ordinarily symbolizes the moon, is used, and this has led to the supposition that Tanit may have been considered the moon goddess. Baal-Hammon, whose function is obscure but who is sometimes regarded as god of the sun, was the masculine divinity.

One inscription, which is shown on the tablet as pictured, is said to be typical of the dedicatory sentiments. It says: "To our Lady, to Tanit Face of Baal, and to the Lord, to Baal-Hammon; that which was vowed by Eshmunhalas, son of Yitten-Melekh, son of Baal-Amas, son of Melekh-Yitten, son of Hami, son of Baal-Hanna, (because) they heard his voice (and) they blessed him."

This message of thanksgiving to the goddess for favors received appears harmless enough at first. The ancestry of the devotees is carefully charted out, and the archæologists have found that sometimes lineage for eight or nine generations is given, indicating that the stelae were set up by representatives of aristocratic old families of Carthage.

But does anything sinister lie back of the phrase "To Tanit . . . and to Baal-Hammon, that which was vowed . . .?" And, more particularly, what of the clay urns and their contents?

Dr. Kelsey asks: "Does this deposit of charred bones of young children under dedicatory stones along with bones of kids and lambs and little birds imply that these were all victims, offered by burning alive to Tanit, or to Tanit and Baal-Hammon?"

Before the question can be answered, he says, there must be a laboratory examination of the contents of the urns and also further excavations, for the sacred area may be much larger and there may be many thousands more of the urns.

Even after more than 2,500 years it may be possible for scientists, by examining the partially burned bones, to determine whether the children were committed to the flames before or after death.

History declares that children were "passed through the fire" by the Carthaginians to their gods, and that the practice persisted even after the

(*Just turn the page*)

Ancient Carthage

(*Continued from page* 39)

Roman conquest. The brazen figure of Baal, most prominent masculine deity of Carthage, is described by an ancient writer as having outstretched arms, so inclined that when babies and young children were placed on them as an offering these would slide down into a burning furnace below. And this may have been the way by which the bones of so many children came to the sacred precincts of the goddess Tanit.

Count Byron de Prorok, associate director of the Franco-American expedition, who began explorations at Carthage, about 1922 and who impressed upon Americans the importance of salvaging something from the famous site before it is too late, says that this question of human sacrifice is one of the greatest problems of the temple area. He believes that the children whose charred bones are found in the urns were offered up alive.

The presence of animal bones in some of the urns suggests to him that perhaps some of the parents succeeded in secretely substituting animals as offerings to the bloodthirsty deities.

The Carthaginians were abhorred by the Greeks and Romans because of this terrible custom of "passing their people through the fire," according to Count de Prorok. Diodorus Siculus mentions that in the year 311 B.C. as many as three hundred people were sacrificed during one ceremony. One of the most remarkable conditions of a peace treaty ever recorded, he says, was that made by Gelon of Syracuse on behalf of the Greeks.

After defeating the Carthaginians at the battle of Himera, they demanded as a condition of peace the abolition of the sacrifice of children at Carthage.

Abbe J. B. Chabot, also a member of the expedition staff, states that it is a significant fact that bones of birds and animals are found in some of the older urns, while the later urns are filled with human remains. This may mean that as they progressed in civilization the Carthaginians sacrificed infants in even greater numbers than in earlier periods.

Whether archæologists can acquire more land and continue their work of solving the numerous Carthaginian mysteries is still uncertain.

Dr. Kelsey's report states that "While excavation and accidental discovery have brought to light thousands of objects of interest reflecting the cultures of the Punic, the Roman and later periods, there are still great gaps in our knowledge; in particular, there is a singular lack of decisive evidence regarding the topography of the city in the different epochs, the stages of its development, and the relations of its harbors to the sea.

"To what extent it is still possible to obtain a knowledge of either Punic or later Carthage by digging can only be ascertained through an extended and skilfully conducted series of trial excavations. But in any case, though the recovery of works of art of a high order cannot be safely anticipated, such excavations are necessary if the world is not soon to lose all opportunity to recover what may yet be recovered of the data requisite to complete that important chapter of cultural history."

A TABLET IN HONOR OF TANIT

Stone tablet in honor of Tanit, favorite Carthaginian deity. The crescent moon, a symbol of the goddess, is carved at the top. The reason for the bottle, resting on a Pedestal, is still unfathomed.

Science News-Letter, October 16, 1926

There were eye specialists in Egypt by 500 B. C.

Congress appropriated $9,000 for rainmaking experiments in 1891.

Alaska now has a game commission to conserve and increase its fur and game resources.

Science News-Letter, October 16, 1926

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ARCHÆOLOGY

Viking Ships to Valhalla

A royal pleasure ship, last resting place of Queen Aasa, a ruler of the Vikings, is one of the most remarkable finds ever made in old graves. At least, this is the verdict of Sophie Gram, who in a recent issue of the journal of the Archæological Society of Washington, *Art and Archæology*, describes the splendor with which this queen of about 800 A.D. was prepared for her "voyage" to meet the Norse gods.

It was a natural idea to the Vikings that their last journey would take them over the sea, Miss Gram explains. A king or queen was buried not only with necessities for a long voyage, but with the luxuries which royalty, even among the hardy Norsemen, has always commanded. A ship, carriage, and four sleighs, all beautifully carved, went into the queen's burial mound to assure her of fitting transportation wherever her death voyage might take her.

"The interment of Queen Aasa was attended by great splendor," she says. "Lavish offerings, the rumors of which spread far abroad, were made at the grave. In her honor fifteen horses, four dogs, and one ox were sacrificed. On board the vessel the queen was surrounded by a luxury which is astounding for those days. In the grave was placed her bed with down pillows and feather quilts. The walls of the burial chamber were covered with costly rugs from foreign countries, as well as with hangings, woven by the queen herself and her maidens, and dyed with vegetable colors. She had with her her lamps, sewing equipment and all imaginable personal things, such as clothes and linen, kitchen utensils, chests with jewelry, also vegetables and grain. For entertainment there were chessboards, decanters with wine, walnuts, and wild apples.

"Her closest bond-woman went with her to death. She had to give up her life in order that the queen should have company on the way to Valhalla. Perhaps she was killed according to the sacrificial ceremonies before being taken on board. But she may have gone into the grave to sit down beside her dead mistress, guarding her last sleep until her own life slowly ebbed out."

The finding of this ship refutes the idea that the people from Viken were semi-barbarous.

The Oseburg ship, as Queen Aasa's craft is called, has been carefully restored and is now in the historical museum at Oslo.

Science News-Letter, October 16, 1926

MEDICINE—BIOLOGY

Sunlight Destroys Vitamins

If the cod-liver oil bottle is allowed to stand too long on the bathroom window sill in the sunshine it is not nearly so worth while to make the baby swallow his daily dose. It will have lost its famous properties to make the young idea "grow big and strong," the inducement held out to down the oil that is an unappreciated part of the bill of fare of most present day youngsters.

Dr. P. R. Peacock of the Middlesex Hospital, London, has discovered that the growth-promoting vitamin A is destroyed by prolonged exposure to sunlight or to irradiation by ultra-violet light. He was led to make this discovery on finding that a bottle of cod-liver oil that had remained on his work bench several months had lost its fluorescent properties when exposed to ultra-violet light.

Chemical tests failed to show the presence of vitamin A but the fluorescence returned when the bottle was kept in the dark, though the chemical tests for the vitamin continued negative. The "deluminated" oil, as Dr. Peacock calls it, was likewise proved lacking in growth-promoting powers when fed experimentally to rats.

Though the deluminated oil has no vitamin A, vitamin D, which prevents rickets, is quite unaffected by the action of ultra-violet light or sunlight.

A similar discovery has been made in the United States by R. W. Titus, J. S. Hughes, W. R. Henshaw, and J. B. Fitch of the Kansas State Agricultural College. They have found that ultra-violet light also destroys vitamin A in cow's milk.

This demonstrated instability of the growth-inducing vitamin, declares Dr. Peacock, makes it very desirable to pay careful attention to the way in which foods which owe their value to its presence are stored.

Science News-Letter, October 16, 1926

GENERAL SCIENCE

Science Service, Limited

The world has been full of a number
of things
That never were known until lately;
Since science found radium, radio,
wings,
She runs where she once walked
sedately.

She burrows and flies, she broadcasts
and pries,
But hiding the sum of her knowledge,
How great she has grown she prefers
to have known
Just to certain professors in college.

Then, thanks to the scout who has
ferreted out
The latest and best of her treasures,
Transferring 'em all to words snappy
and small,
From sesquipedalian measures.

The best and the last from that science
field vast,
He serves as a food predigested;
The gist and the meat for the man on
the street,
Of savants from Einstein to Breasted.

Psychology slants and cocktails for
plants,
The bee's knees, the kitten's pajamas;
It's science, but gee! Any flapper
can see,
As well as your savants or lamas.

—Keith Preston in
Chicago Daily News.

Science News-Letter, October 16, 1926

Because people in Hawaii eat imported vegetables in preference to home grown varieties, the Hawaiian Agricultural Experiment Station has published a list of 62 Hawaiian vegetables with notes on their food value and directions for cooking and serving them.

Science News-Letter, October 16, 1926

STUDY HELPS FOR SCIENCE CLASSES

(These articles will be found to be especially useful in class work.)

GENERAL SCIENCE

Ancient Carthage is Scene of Real Estate Boom, p. 33. Arranging Your Mind, p. 35. Vegetation on Mars, p. 37. Viking Ships to Valhalla, p. 41. Ancient Arab Customs, p. 43. Football in Good Old Days, p. 43. Anniversaries of Science, p. 47. Memory Rimes, p. 47. Articles marked with * in classifications below.

HYGIENE

Future Men and Heredity, p. 37. Sunlight Destroys Vitamins, p. 41. After 500 Years, p. 43.

CHEMISTRY

Sugar from Wood,* p. 37.

BIOLOGY

First Details on Java Skull,* p. 35. Dean of American Surgeons,* p. 35. Future Men and Heredity, p. 37. Sunlight Destroys Vitamins, p. 41. Nature Ramblings,* p. 43.

PHYSICS

Wells Bewildered,* p. 45. Test Airplane Wing Cloth, p. 45. An Almost Human Clock, p. 47.

(This will fit on a 3 x 5 card.)

Science News-Letter, October 16, 1926

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ETHNOLOGY—ARCHÆOLOGY

Ancient Arab Customs

Scientists puzzling over cuneiform documents and ruins of Babylonian cities may turn to the living Arabs of the countryside for new light on customs of ancient Babylonia. This is the finding of Dr. Raymond P. Dougherty, who has spent several months making an archæological survey of southern Mesopotamia, while on leave from Goucher College at Baltimore.

Dr. Dougherty, who has returned to this country to become professor of Assyriology at Yale University, reports that the study of existing Arab life in southern Mesopotamia, including the customs of the Marsh Arabs, indicate that the present is saturated largely with the past.

"A striking proof of this was noted in structures with slanting sides and recessed panels, reminding one of the old Sumerian and Babylonian temple towers," he said. "Other evidences of the survival of ancient ways of doing things were found in existing methods of soil cultivation, irrigation, and navigation. So clear are these resemblances to old practices that cuneiform documents, recovered from ruined cities and deciphered by scholars, gain new meaning from a study of present conditions."

The area explored by Dr. Dougherty was centuries ago an important part of Babylonia. The survey was for the purpose of determining the the archæological possibilities of the region, and he reports that numerous sites, some known before, others freshly discovered, are capable of yielding rich rewards to the excavator's spade. Some objects of antiquity, such as seal impressions, seal cylinders, decorated pieces of pottery, stone implements and worked flints, were obtained and brought to America for future study.

"Scores of city mounds, some of them representing debris from 3,000 to 4,000 years old, were visited and investigated," said Dr. Dougherty. "For many days the expedition waded its way through a district which was very populous in antiquity, because it was irrigated by the Euphrates river and its branches. Now the land is barren and deserted, due to the absence of water in old channels and artificial canals.

"During the last week of the survey there was opportunity to study the picturesque life of the Marsh Arabs who dwell in reed huts in the swampy sections of southern Mesopotamia."

Science News-Letter, October 16, 1926

SPORTS

Football In Good Old Days

For as concerning football playing I protest unto you that it maie rather bee called a friendlie kinde of fight than a plaie or recreation; a bloudie and murtherying practise than a fellowlie sporte or pastyme. For doeth not everyone lye in waight for his adversarie, seekyng to overthrow hym and to picke hym on the nose, thoügh it bee uppon harde stones, in ditch or dale, in valley or hill? In what place so ever it bee he careth not, so he mav have hym downe: And he that can serve the moste of this fashion, he is counted the onlie fellowe, and who but he? So that by this meanes sometymes their neckes are broken, sometymes their backes, sometymes their legges, sometymes their armes, sometymes one parte thrust out of joynt, sometyme another; sometyme the noses gush out with bloud, sometyme their eyes start out; and sometymes they are hurt in one place, sometymes in an other. But who so ever escapeth awaie the best, goeth not scotfree, but is either sore wounded and bruzed, or els scapeth every harlie. And no marvaile for they have sleightes to meet one betwixt two, to dash hym against the harte with their elbowes, to hitte hym under the shortte ribbes with their griped fists, and with their knees to catch hym upon the hip, and to picke hym on his necke, with an hundred such murtheryng devices: And hereof groweth envie, malice, rancour, cholour, hatred, displeasure, enmitie, and what not els? Any sometyme fightyng, braulyng, contention, quarrell pickyng, murther, homicide, and great effusion of bloud, as experience daily teacheth.

—Philip Stubbs,
Anatomy of Abuses
(Sixteenth Century)

Science News-Letter, October 16, 1926

MEDICINE

After 500 Years

It is recorded of Methusalem, who, being the longest liver, may be supposed to have best preserved his health, that he slept always in the open air; for when he had lived five hundred years an angel said to him: "Arise, Methusalem, and build thee a house, for thou shalt live five hundred years longer." But Methusalem answered and said: "If I am to live but five hundred years longer it is not worth while to build me a house; I will sleep in the air as I have been used to do."

—Benjamin Franklin.

Science News-Letter, October 16, 1926

BIOLOGY

NATURE RAMBLINGS

By Frank Thone

Autumnal Arthropods

On the whole, aquatic insects survive longer in autumn than do those of the land, probably because water radiates its acquired heat more slowly than do soil and rock, thus giving its lesser cold-blooded denizens a longer lease of life. Among the last of the insects to disappear is the water boatman, and when he does vanish it is only to hibernate in the slime at the bottom of his pond, so that on mild and iceless winter days he may sometimes come up to the surface for a look around.

The water boatman should have been christened the submarine boatman, for he does but little skimming of the surface. Every couple of hours he comes up for air, for he is still as much an air-breather as a butterfly, for all his diver's life. But the rest of the time he spends on the bottom, clinging to stems and roots with his tong-like middle pair of legs, while he scoops up quantities of ooze with his front pair, which are spoons. He spills this unsavory-seeming mess in front of his face incessantly, and out of it he sorts tiny animals and plants with his mouth.

The third pair of legs are what give him his distinguishing name, for they are perfect oars. Straight and stiff on the sweep, they are pulled forward on the return with but little resistance. And their feet are equipped with automatic paddles which set themselves athwart the water on the stroke, but fold up on the return—a faultless "feathering" arrangement.

But some of the multi-legged creatures of the land do survive. Which of us, young or old, does not remember the incantation proper to the finding of a Daddy-Long-Legs:

"Grand-daddy-long-legs, where is my cow

"Tell me right now

"Or I will surely mash you!"

And all too often we young savages used to carry into effect this sanguinary threat, in spite of the fact that

(*Just turn the page*)

Nature Ramblings This Week

(*Continued from page 43*)

Daddy-Long-Legs

we had no cow, and that the helpless creature we had cornered or captured could have had no knowledge of her whereabouts in any case. But if the strange, long-limbed, spiderlike thing that was not a spider raised a tentative leg and pointed waveringly, it mattered not in what direction, the ritual requirement was satisfied and the captive was set free.

Daddy-long-legs was also useful for the terrorizing of small and despised girls, who didn't know it wasn't spider anyway and screamed at the threat of having those quivering, wiry legs dropped on their necks. The poor arachnid was probably as badly frightened, but couldn't scream, so we gave no thought to his feelings. Children, at least young male ones, are *not* gentle, poets to the contrary notwithstanding.

Some of us knew daddy-long-legs as "harvestmen;" but that was a "grown-up" name, given because the creatures become very abundant in autumn. Even now that some of us have become grownups ourselves there is still a fascination about these odd, ineffectual, harmless, seemingly useless relatives of the spiders who wander through the dying lesser world among the grasses and stubble, like philosophical specters on stilts.

PAST VOLUMES

Nine volumes of the SCIENCE NEWS-LETTER have been issued in mimeographed form. Volume I consisted of numbers 50 to 90, inclusive, including the period March 13 to December 30, 1922; thereafter volumes consisted of 26 numbers covering half-year periods, with the exception of Volume IX which consisted of numbers 273 to 285, inclusive, and included the three-month period of July, August and September of this year. Volume X began with No. 286, the first to be printed, and will cover only the three last months of this year. Thereafter volumes will cover half-year periods. The pages in each volume will be numbered consecutively.

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PHYSICS

Wells Bewildered

Quotation from THE WORLD OF WILLIAM CLISSOLD, by H. G. Wells. New York: Doran.

Everybody in those days thought of atoms as tangible things, and of space as a framework of three dimensions as rectangular as a window sash. The ether, the now vanished ether, wrapped about us like a garment, and time was like a star and dwelt apart . . . . .

Since then all those easy old imaginings of quasi-tangible atoms and infinite incessant space have dissolved away insensibly. We have followed our deductions further and further into a stirring crystalline complex of multi-dimensional curvatures and throbbing reactions. Energy is and it is not, and then again it is, all Being flickers in and out of Not-being, there is an irrational bound set to motion, there is a limit to the range of temperature. Space is bent in some incomprehensible fashion so that straight lines re-enter into themselves, gravitation is a necessary consequence of duration, and atoms are the orbits and harmonies of infinitesimal electrical charges. Einstein's own description for popular enlightenment of his space-time system with its bent and possibly unstable coordinates, reads to me like the description of a clear vibrating four-dimensional haggis. Weyl goes wider and further, and Bohr has imposed a rippling intermission upon the whole universe. In the depths or heights of physics, for one word seems as good as the other when all direction is lost, I find my mind sitting down at last exhausted of effort in much the mood of Albrecht Dürer's *Melancolia*. I have gone far along that way, and I can go no farther into that wilderness of vanishing forms and puffs of energy in a quadri-dimensional field of force.

Science News-Letter, October 16, 1926

AERONAUTICS

Test Airplane Wing Cloth

How tight should the covering on an airplane's wings be? A new instrument that measures the tension of the cloth that holds the helium in a dirigible as well as that used on planes has been perfected in the laboratories of the United States Bureau of Standards.

It is of great importance, say experts, that the tension of the fabrics used in aircraft should be exactly right. If it is not taut enough the operation of the plane is unsatisfactory. It is is drawn too tightly there is likely to be strain on the metal framework.

Science News-Letter, October 16, 1926

EDUCATION

A College President Talks

THE COLLEGE PRESIDENT and WHAT EDUCATION HAS THE MOST WORTH. By Charles F. Thwing. New York: Macmillan Company.

President Thwing has summed up his own lifetime of experience and responsibility and that of many of his colleagues in the field of educational administration in "The College President," a book which may easily take rank with President Eliot's University Administration. Besides outlining and illustrating the manifold duties which fall to his share, President Thwing discusses the perils that beset the captain of the academic ship of state and in particular the danger of autocratic and tactless treatment of the faculty. Yet he opposes the system of faculty control advocated by Cattell, Kirkpatrick and many other American scholars on the ground that the American university, still in the growing stage, needs the services of a group of financial experts as trustees and an administrative expert as President. Speaking in terms of the British Prime Ministership, as the next most difficult job in the world, President Thwing wittily says that the ideal American College President should possess "the boldness of Peel with the many-sidedness of Gladstone, the sagacity of Disraeli with the considerateness of Campbell-Bannerman, the breadth and calmness of Balfour with the popularity and personal charm of Lloyd-George."

President Thwing's "What Education Has the Most Worth?" covers a much broader field, but plows less deeply. It is a rapid survey of all the various educational influences that play upon the plastic mind, not only the school, the church and the library, but equally the newspaper and the moving picture. Unfortunately the space at his disposal prevented any very full consideration of any of the topics touched upon.

Science News-Letter, October 16, 1926

Photoelectric cells, which give an electric current when exposed to light, have been made so delicate that they can detect the variation in light when a hair is placed in front of a nearby electric bulb.

Cattle, sheep, and hogs that are fed rations containing large amounts of vitamins A and B will furnish meat that is richer in these vitamins than meat from animals lacking these food elements.

Science News-Letter, October 16, 1926

First Glances at New Books

THE STORY OF PHILOSOPHY, by Will Durant, New York: Simon and Schuster, $5.00.

Fifty thousand sold in five months! Who says philosophy is not a live subject nowadays? It is when a live author handles it, no matter how long the philosopher has been dead. Unpedantic explanations and criticisms of Plato, Aristotle, Bacon, Spinoza, Voltaire, Kant, Schopenhauer, Spencer, Nietzsche, Bergson, Croce, Russell, Santayana, James and Dewey.

BIRTH CONTROL: Facts and Responsibilities, Baltimore: Williams and Wilkins, $3.00.

A discussion of the question from various standpoints by Dr. Adolf Meyer of Johns Hopkins Hospital, Margaret Sanger, Professor Raymond Pearl of Johns Hopkins, Professor E. A. Ross of the University of Wisconsin, Professor E. M. East of Harvard, Rabbi C. A. Rubenstein, Professor H. A. Miller of Oberlin, Dr. R. McC. Chapman, Professor R. A. Spaeth of Johns Hopkins, President C. C. Little of the University of Michigan, Professor L. J. Cole of the University of Wisconsin and Dr. Eleanor R. Wembridge.

EXPERIENCE AND NATURE, by John Dewey, Professor of Philosophy in Columbia University. Chicago. Open Court Publishing Co. $3.

The most mature and complete exposition of the philosophy of one of America's foremost thinkers who for forty years has been an educator of educators. The first series of the biennial lectures of the Paul Carus Foundation. Dr. Dewey here expounds the metaphysical foundations of the pragmatic radical empirical mode of thought which he has developed in his books and teaching in America and China.

OPINIONS RENDERED BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE. Opinions 91 to 97. Washington. The Smithsonian Insitution. 1926.

Of interest to students of systematic zoology.

THE WORLD THAT WAS. By John G. Bowman. New York. The Macmillan Company.

Reminiscences of boyhood days and school life by the President of the University of Pittsburgh, written in a delightfully intimate and poetic style and beautifully printed.

Science News-Letter, October 16, 1926

Science Service Books

In cooperation with leading book publishers, Science Service has taken part in editing the following books on science:

CHATS ON SCIENCE. By Edwin E. Slosson. New York: The Century Company. 1924. $2.00.

SCIENCE REMAKING THE WORLD. Edited by Otis W. Caldwell and Edwin E. Slosson. New York: Doubleday, Page & Co. 1923. $2.50 and $1.00.

KEEPING UP WITH SCIENCE. Edited by Edwin E. Slosson. New York: Harcourt, Brace & Co. 1924. $2.50.

WHY THE WEATHER? By C. F. Brooks. New York: Harcourt, Brace & Company. 1924. $2.00.

SOIL AND CIVILIZATION. By Milton Whitney. Library of Modern Sciences. New York: D. Van Nostrand Co. 1925. $3.00.

ANIMALS OF LAND AND SEA. By Austin Clark. Library of Modern Sciences. New York: D. Van Nostrand Co. 1925. $3.00.

THE EARTH AND THE STARS. By C. G. Abbot. Library of Modern Sciences. New York: D. Van Nostrand Co. 1925. $3.00.

MYSTERY OF MIND. By Leonard Troland. Library of Modern Sciences. New York: D. Van Nostrand Co. 1926. $3.00.

FOUNDATIONS OF THE UNIVERSE. By M. Luckiesh. Library of Modern Sciences. New York: D. Van Nostrand Co. 1925. $3.00.

CHEMISTRY IN MODERN LIFE. By Svante Arrhenius, translated and revised by C. S. Leonard. Library of Modern Sciences. New York: D. Van Nostrand Co. 1925. $3.00.

CHEMISTRY IN THE WORLD'S WORK. By H. E. Howe. Library of Modern Sciences. New York: D. Van Nostrand Co. 1926. $3.00.

EVERYDAY MYSTERIES. By Charles Greeley Abbot. Young People's Shelf of Science. Edited by E. E. Slosson. New York: The Macmillan Co. 1923. $2.00.

DWELLERS OF THE SEA AND SHORE. By William Crowder. Young People's Shelf of Science. Edited by E. E. Slosson. New York: The Macmillan Co. 1923. $2.25.

Any book listed above—or any book in print—will be sent to any address on receipt of list price plus postage.

SCIENCE SERVICE

21st and B Streets, N. W. **Washington, D. C.**

ANNIVERSARIES OF SCIENCE

October 17, 1907.—First regular wireless dispatch over the Atlantic Ocean for commercial purposes. Messages were sent from Ireland to Glace Bay, N. S. The following message was received from Sir Norman Lockyer:

All honor to the country where, beyond all others, the Central Government, the State Legislatures, and private citizens foster education and research as the true, and indeed the only, foundation of a nation's greatness. Such a nation will be the one to profit most from the future victories of science, which are certain to beggar the achievements of the present as wireless telegraphy pales the achievements of the past.

October 22, 1891.—Dr. Robert Koch announced the discovery of Tuberculin as a cure for tuberculosis.

Against his own judgment he (Koch) was trying to convince himself he had discovered a cure for tuberculosis. The authorities . . . . were putting pressure on him . . . "We have showered you with medals and microscopes and guinea-pigs—take a chance now, and give us a big cure, for the glory of the Fatherland, as Pasteur has done for the glory of France!" It was ominous stuff like this that Koch was always hearing. He listened at last, and who can blame him, for what man can remain at his proper business of finding out the ways of microbes with Governments bawling for a place in the sun—or with mothers calling? So Koch listened and prepared his own disaster by telling the world about his "Tuberculin."

—Paul de Kruif: *Microbe Hunters.*

October 24, 1851.—Ariel and Umbriel, interior moons of Uranus, discovered by Lassell.

Uranus has four moons, of which the outside one takes a little less than half the period of our moon to encircle its planet, while the inmost one goes round in 2½ days. A curious thing about the satellites of Uranus is that they all go in orbits inclined nearly at right angles to the ecliptic. Thus it happened in 1882 and 1924 that their orbits were seen edgewise, and the satellites seemed to us to swing north and south on each side of the planet. In 1903 and 1945, on the other hand, the orbits of the satellites present their true circular form.

—Abbot: *The Earth and the Stars.*

October 27, 1904.—The New York Subway was opened. In an editorial on that day, the *New York Times* remarked:

In this joyous hour when the great city exults that it has at last got a veritable rapid transit railroad, let those among us who are of sober and philosophic bent bow their heads in humility and deplore the weakness, the irresolution, and the infirmity of purpose which have made us take such an unconscionable time in getting it.

A column of questions likely to be asked was printed, with their answers. From it we select the following:

Q. Will every passenger get a seat A. There are straps in the cars for overcrowded times.

Readers are invited to send in important dates and appropriate quotations that should be noted in this department.

Science News-Letter, October 16, 1926

TECHNOLOGY

An Almost Human Clock

A clock that turns the lights of the house off or on at any time desired and almost puts out the cat was recently exhibited at the National Research Council. The clock is termed almost human by its inventor, Dr. J. F. Van Slyke of the Horological Institute of America. It resembles an everyday clock, but it is wound up by a motor built into the movement and operated by the ordinary house electric current. Not only does it record the time of the day but also the day of the month and the month of the year. This is indicated by two small hands in place of the second hand.

The clock can be so set that it will turn the electric lights in the house or office where it is located off or on at any time desired. If the electric current is accidentally cut off the clock will keep on running for more than four days without electrical winding, and at the end of that time if the current is turned on again the clock will "pick up" the lost windings.

Science News-Letter, October 16, 1926

GENERAL SCIENCE

The Spirit of Science

Quotation from SCIENCE AND LIFE, by Frederick Soddy. New York: Dutton.

Rather than being in league with militarism and armament firms, science is, in fact, the only really working socialism. Scientific men work too often without reward for the love of their science, and freely publish their discoveries for the good of the whole community. Though the contributor of the last mite of knowledge usually gets popular credit for the whole discovery, the advance of science as a whole is entirely bound up with this communism of its inheritance. The spirit of secrecy, and of individual ownership of knowledge, is absolutely antagonistic to the spirit of science.

Science News-Letter, October 16, 1926

When a wealthy man died in China it was once customary to kill his servants and bury them with him, so that he might be properly attended in the spirit world.

Science News-Letter, October 16, 1926

Memory Rimes

The Geological Eras

Archæo, Protero-, Paleo-, Meso-, and Cenozoic Ages-
These rimes will bind
Them all in your mind
Like so many birds in cages!

Archaeozoic—
In Archaeozoic times
Grew the first primeval slimes.

Proterozoic—
Invertebrates in early stages.
Filled the Proterozoic ages.

Paleozoic—
Cam-, Ordo-, Sil-, Dev-, Carbo-, Perm-
Make up the good old Paleo- term.

Mesozoic—
The Meso- Era, not so spacious,
Holds Trias, Juras and Cretaceous.

Cenozoic—
Eo-, Oligo-, Mi- and Pli-
Pass the Ceno- Era by.

Paleozoic subdivisions—
Cambrian, Ordovician, Silurian,
Devonian, Carboniferous, Permian.
Sea-life marks the Cambrian,
Fish the Ordovician.
Siluric seas invade the lands,
Amphibians tread Devonian strands.
In Carbon times the insects grow.
The Permians many reptiles show.

Mesozoic subdivisions—
Triassic, Jurassic, Cretaceous.
Triassic dinosaurs arise,
Jurassic bird and reptile flies;
Earliest mammals are Cretaceous—
Insects too, and flowers herbaceous.

Cenozoic subdivisions—
Eocene, Oligocene, Miocene,
Pliocene, Pleistocene.
In Eocene and Oligo—
We see the higher mammals grow.
In Mi- and Pli-, Man takes the stage,
Till Pleisto- brings the glacial age.

—Sir Richard Paget.

Science News-Letter, October 16, 1926

BIOLOGY

The Lesson of the Lobster

The lobster's home is in the sea
And now his presence is revealed
But he has wandered far afield
And now his presence is revealed
Within our Best Society!
This lesson to us all is sent
To give us due encouragement.

—D. S. Jordan,
Eric's Book of Beasts.

Science News-Letter, October 16, 1926

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